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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,552	11/19/2003	Jinlian Hu	007198-556	5057

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EXAMINER

SERGEANT, RABON A

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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04/27/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No. 10/715,552	Applicant(s) HU ET AL.	
	Examiner Rabon Sergent	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 8, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-12, 16-20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-12, 16-20 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1796

1. Claims 1-3, 7-12, 16-20, and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have failed to adequately define the language, “shape memory function”. It is unclear how the claimed function corresponds to the shape memory disclosures within the specification. Specifically, it is unclear what limitation is to be ascribed to the “function” language, in that it is unclear if or to what extent the “function” language requires the polyurethane to possess the features disclosed.

2. Claims 1-3, 7-12, 16-20, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what limitations are encompassed by the “shape memory function” language, in that it is unclear how to interpret the “function” language. In view of the ambiguity associated with the “function” language, it is unclear to what extent the language requires the polyurethane to be a shape memory polymer.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 7-12, 16-20, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ramanathan et al. (‘213).

Patentees disclose the production of polyurethane aqueous dispersions, wherein a prepolymer is produced in the presence of solvent from diisocyanates, polyols and chain extenders that correspond to applicants' claimed components. After formation of the prepolymer, the acid groups resulting from incorporation of the chain extender are neutralized with an amine, such as triethylamine. The neutralized prepolymer is then dispersed in water and the solvent is removed. This disclosure satisfies applicants' steps d) through f). Furthermore, applicants' claimed ratios and reaction conditions are disclosed within the reference. See column 2, lines 45+ and columns 3-5. Patentees teach at column 5, lines 14-16 that the diisocyanate, polyol, and chain extender may be reacted sequentially to form block copolymers; therefore, patentees are considered to adequately disclose applicants' steps a) through c). Since sequential reaction is disclosed and since heating is clearly disclosed to promote such reaction, despite applicants' remarks, the position is taken that the step of heating the reactants, corresponding to applicants' step b), is clearly encompassed by the disclosure. Furthermore, given the disclosure of the time frame for reaction set forth within lines 54 and 55 of column 2 and the disclosure pertaining to sequential reaction, the position is taken that applicants' claimed time frames are encompassed by the disclosure of the reference. The skilled artisan would immediately recognize that the disclosed time frames are applicable to the disclosed sequential reaction. Furthermore, since the disclosed polyurethanes are produced from reactants that meet those claimed, applicants' claimed physical properties, including shape memory properties, are considered to be inherently possessed by the disclosed polyurethanes.

5. Applicants' arguments have been carefully considered; however, they are insufficient to overcome the prior art rejection. Applicants' arguments relating to the sequential process within

Art Unit: 1796

pages 9 and 10 of the response are not well taken, because applicants appear to fundamentally misunderstand what sequential reaction means as it pertains to the production of the polyurethanes of the reference. From applicants' remarks, it appears that they believe that the sequential reaction language requires the initial reaction of the polyol and the ionic group bearing organic compound. However, the skilled artisan in the field of polyurethanes would **not** interpret the disclosure as applicants have done. The skilled artisan would understand that the sequential reaction language relates to the sequential reaction of either the polyol or ionic group bearing compound with the diisocyanate and then the reaction of the remaining active hydrogen containing compound (which would be either the polyol or the ionic group bearing compound that was not initially reacted with the diisocyanate) with the reaction product resulting from the initial reaction. **No other interpretation is reasonable or justifiable.** Applicants' interpretation that the sequential reaction disclosure of the reference is teaching the reaction of the polyol and the ionic group bearing compound is also completely untenable for the following reason. The whole purpose of the ionic group bearing compound is to provide ionic groups to render the polyurethane water dispersible; accordingly, it is well understood that these ionic groups are not to react with such groups as the hydroxyl groups of the polyol, because such a reaction would consume them and they would not be available for neutralization to yield the water dispersible ionic groups. Furthermore, the hydroxyl groups of the ionic group bearing compound cannot be considered to be reactive with the hydroxyl groups of the polyol. Furthermore, despite applicants' arguments, they have not established any criticality associated with the sequence of reaction. There is nothing on the record to establish that sequential reaction yields a product that is patentably distinct from one where all reactants are reacted

Art Unit: 1796

simultaneously. While applicants have referenced U.S. Patent 4,689,356, they have provided no thorough discussion of how this patent clearly establishes a patentable distinction, as it relates to the instant polyurethane. Furthermore, the examiner takes the position that such a showing would be immaterial to the issue of anticipation, since the selection of reaction scheme is limited to only a few possible schemes within Ramanathan et al. and such a limited number of schemes falls within the realm of anticipation.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Rabon Sergent at telephone number (571) 272-1079.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

April 22, 2009